# US Army Medical Research and Materiel

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# A Pharmaceutical Composition Containing pGLU-GLU-PRO-$NH^2$ and Methods for Treating Diseases and Injuries to the Brain, Spinal Cord and Retina Using Same

## Features and advantages:

- **EEP neuro-protective efficacy enhanced when administered with SPBN in tests with rat neurons**
- **Could be administered systemically or topically as eye drops or non-irritating ointments**
- **Has potential to achieve rapid, high retinal concentration as it is not degraded in the bloodstream**
- **Could potentially prevent the enlargement of scars if used prior to laser**

## Patent Status

- **Has potential use as adjuvant therapy to cataract surgery and to slow glaucoma**

## Point of Contact

This invention relates to a neuro-protectant composition containing pGLU-GLU-PRO-$NH^2$ (EEP) or a combination of EEP and N-tert-Butyl-alpha-(2-sulfophenyl) nitrone (SPBN) that can be used to treat and prevent diseases and injuries of the brain, spinal cord, and retina.

Twenty percent of all combat wounds involve the head. Closed head injuries are more prevalent in the military than in the civilian community, and certain groups (e.g., para-troopers) are at special risk for both head and spinal injury. Among Naval personnel, there is an increased risk for decompression sickness (DCS), of which the major neurological complication is spinal cord damage. All military personnel are at risk for both accidental and deliberate laser injury to the retina. Effects range from transient impairment to lasting disability or blindness. Injuries and diseases to the brain, spinal cord, and retina may also occur in the civilian sector, including injuries to automobile accident victims. Despite extensive clinical and experimental research, there are no well-defined therapies for these conditions and there are very few available treatments for brain injury today. Therefore, a means for preventing or ameliorating damage to the brain, spinal cord and retina by administration of protective/ healing compounds is needed.

The invention could potentially be used for a wide range of injuries and diseases, for example at the first sign of retinal or brain injury, or to treat degenerative brain diseases such as Parkinson's, Huntington's, and Alzheimer's. It could potentially be given prophylactically to individuals such as firefighters and welders who are in danger of retinal damage.

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